FIG. 1

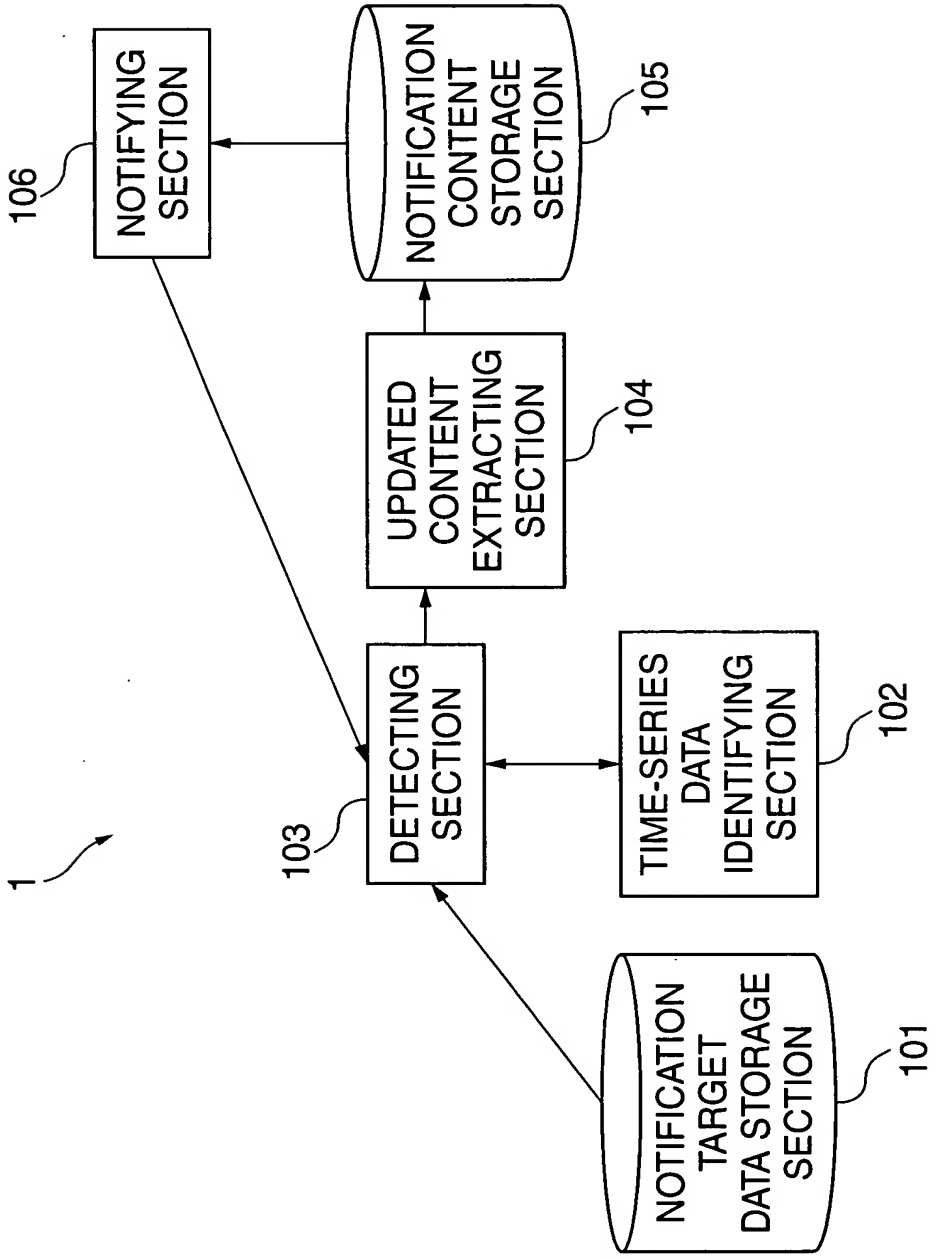

1
NOTIFYING SECTION
106
NOTIFICATION CONTENT STORAGE SECTION
105
UPDATED CONTENT EXTRACTING SECTION
104
DETECTING SECTION
103
TIME-SERIES DATA IDENTIFYING SECTION
102
NOTIFICATION TARGET DATA STORAGE SECTION
101

FIG. 2

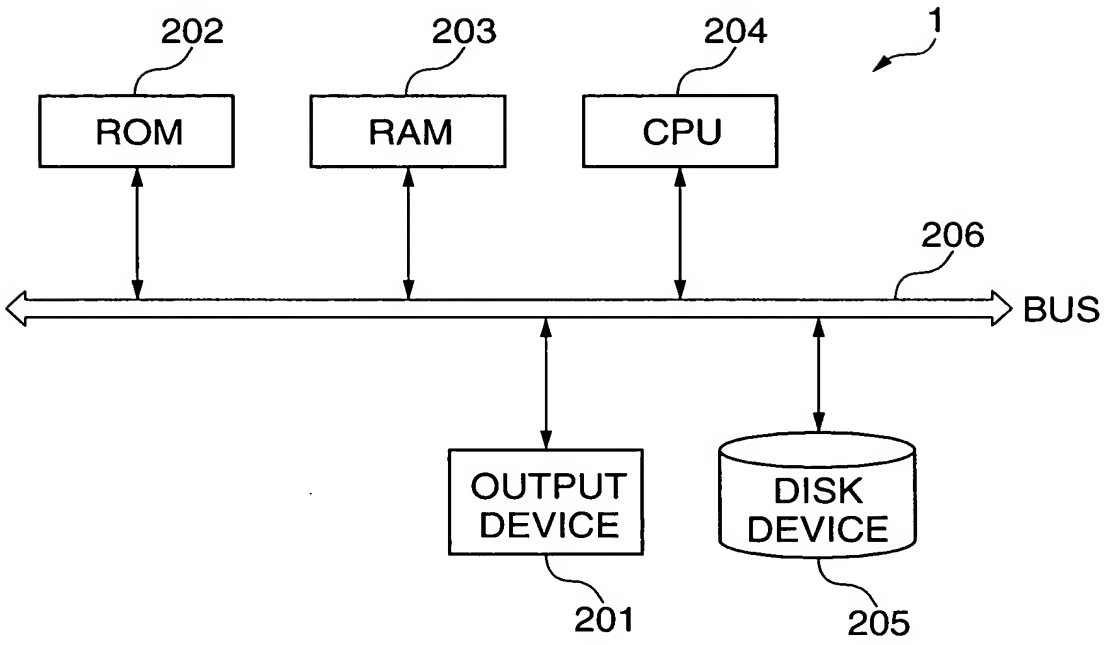

202
203
204
1
ROM
RAM
CPU
206
BUS
OUTPUT DEVICE
DISK DEVICE
201
205

FIG. 3

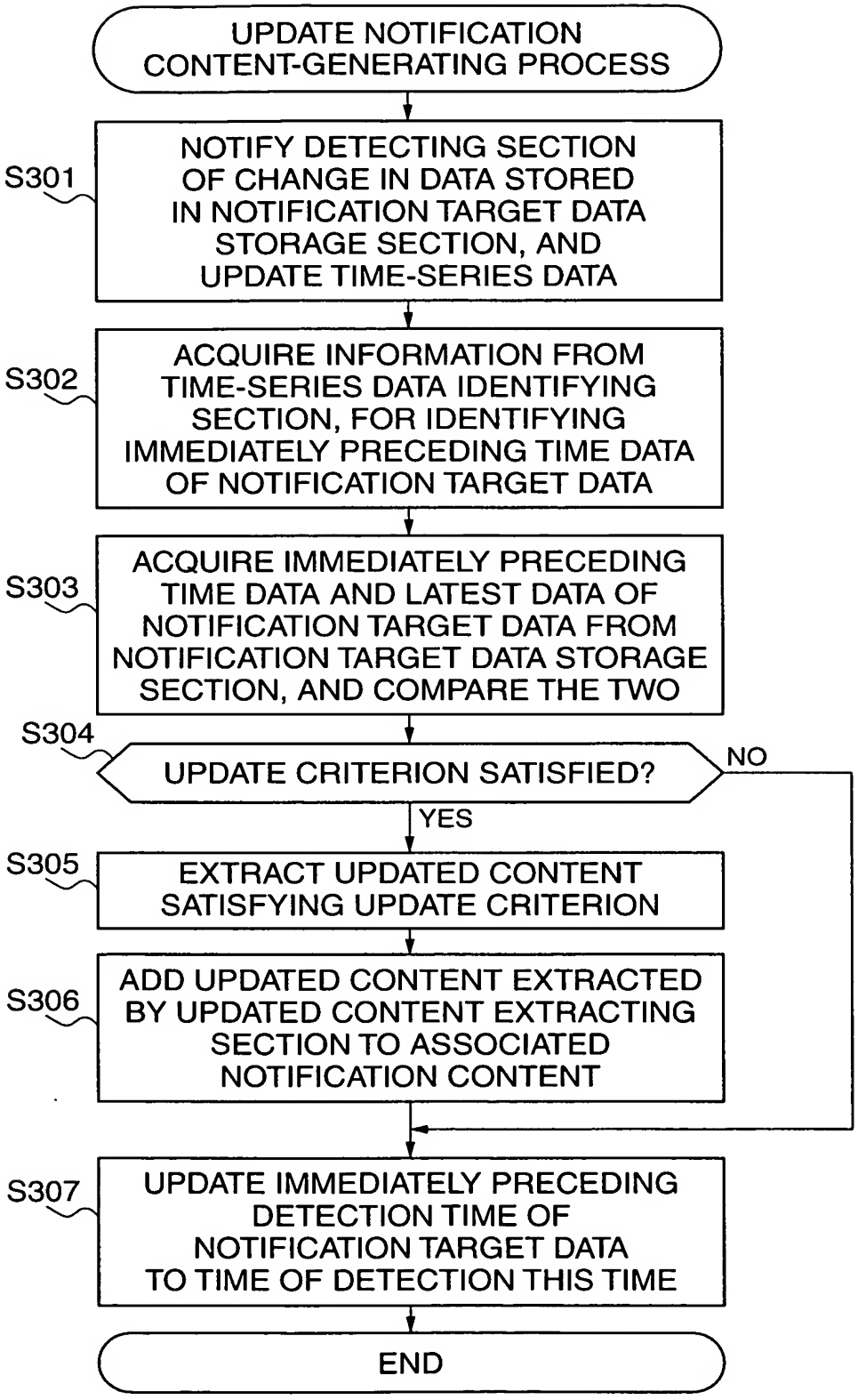

UPDATE NOTIFICATION CONTENT-GENERATING PROCESS
S301
NOTIFY DETECTING SECTION OF CHANGE IN DATA STORED IN NOTIFICATION TARGET DATA STORAGE SECTION, AND UPDATE TIME-SERIES DATA
S302
ACQUIRE INFORMATION FROM TIME-SERIES DATA IDENTIFYING SECTION, FOR IDENTIFYING IMMEDIATELY PRECEDING TIME DATA OF NOTIFICATION TARGET DATA
S303
ACQUIRE IMMEDIATELY PRECEDING TIME DATA AND LATEST DATA OF NOTIFICATION TARGET DATA FROM NOTIFICATION TARGET DATA STORAGE SECTION, AND COMPARE THE TWO
S304
UPDATE CRITERION SATISFIED?
NO
YES
S305
EXTRACT UPDATED CONTENT SATISFYING UPDATE CRITERION
S306
ADD UPDATED CONTENT EXTRACTED BY UPDATED CONTENT EXTRACTING SECTION TO ASSOCIATED NOTIFICATION CONTENT
S307
UPDATE IMMEDIATELY PRECEDING DETECTION TIME OF NOTIFICATION TARGET DATA TO TIME OF DETECTION THIS TIME
END

FIG. 4

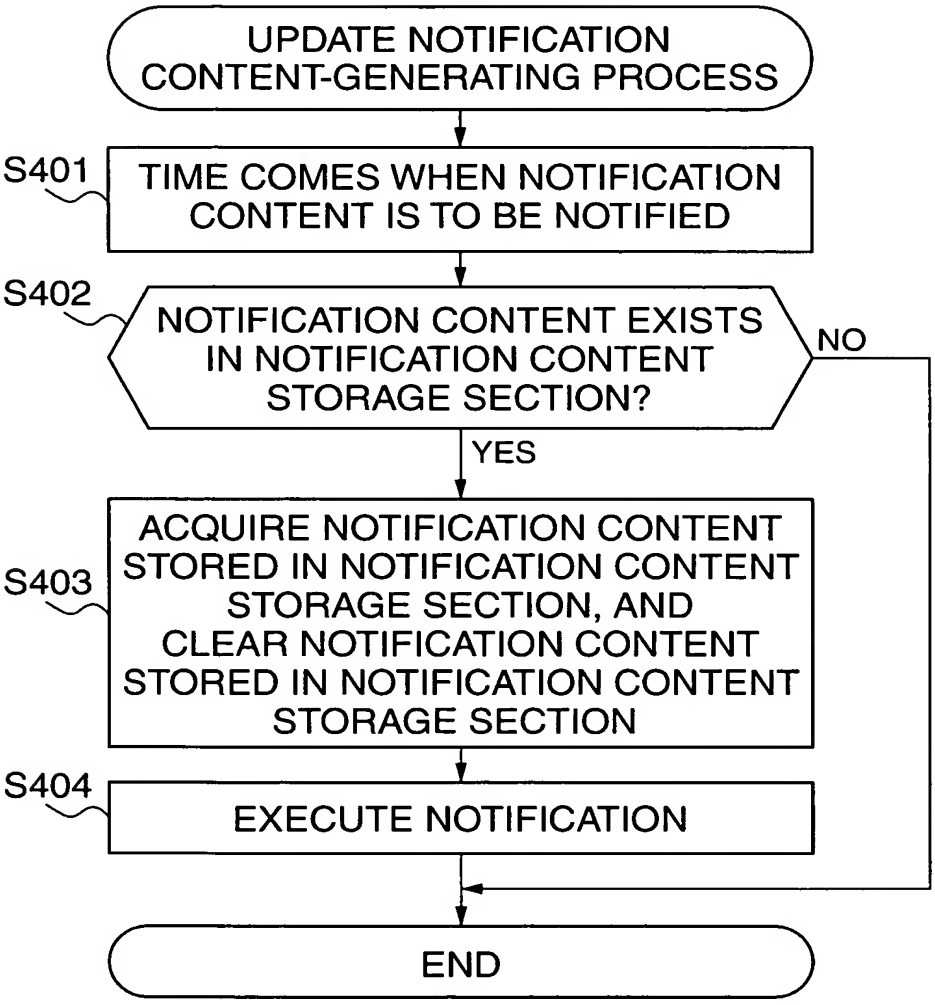

UPDATE NOTIFICATION CONTENT-GENERATING PROCESS
S401
TIME COMES WHEN NOTIFICATION CONTENT IS TO BE NOTIFIED
S402
NOTIFICATION CONTENT EXISTS IN NOTIFICATION CONTENT STORAGE SECTION?
NO
YES
S403
ACQUIRE NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION, AND CLEAR NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION
S404
EXECUTE NOTIFICATION
END

FIG. 5

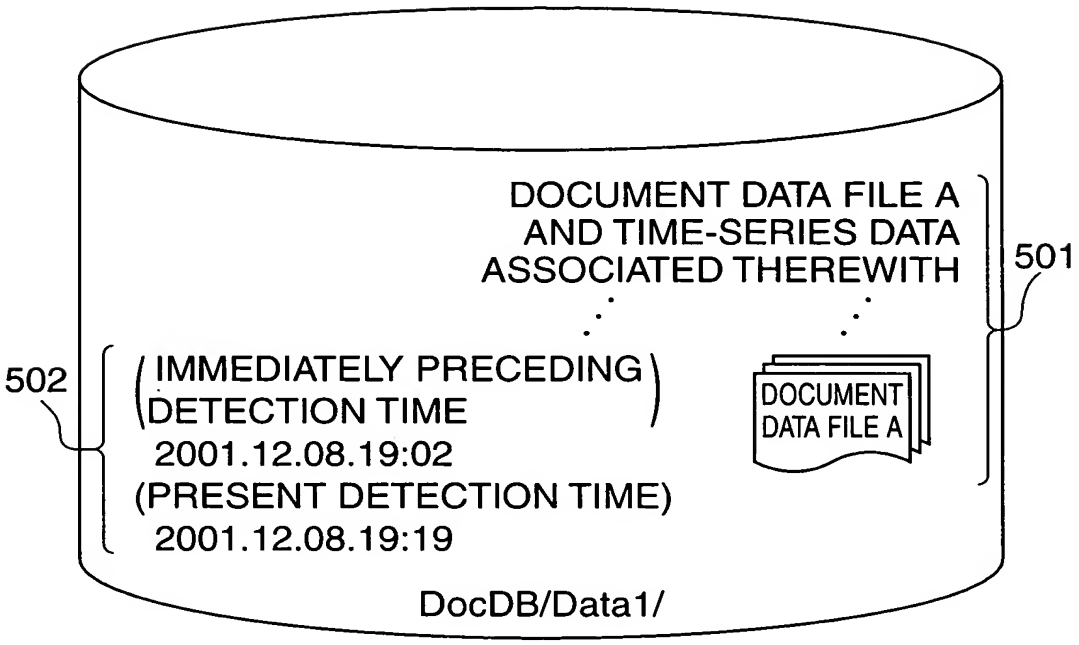


FIG. 6

601

NOTIFICATION TARGET DATA	IMMEDIATELY PRECEDING DETECTION TIME
DocDB/Data1/DOCUMENT DATA FILE A	2001 12 08 19:02
DocDB/Data1/DOCUMENT DATA FILE B	2001 12 07 20:00
⋮	⋮

FIG. 7A

701A

```
<HTML>
    <HEAD>
        <TITLE>
TODAY'S GAME_FIRST TEAM
    vs. SECOND TEAM
        </TITLE>
    </HEAD>
    <BODY>
        <P>
FIRST TEAM : SECOND TEAM
    (BEFORE GAME)
        </P>
    </BODY>
</ HTML>
```

DOCUMENT DATA A STORED AT PRECEDING NOTIFYING TIME

FIG. 7B

701B

```
<HTML>
    <HEAD>
        <TITLE>
TODAY'S GAME_FIRST TEAM
    vs. SECOND TEAM
        </TITLE>
    </HEAD>
    <BODY>
        <P>
FIRST TEAM : SECOND TEAM
    (FINAL)  10 : 2
        </P>
    </BODY>
</ HTML>
```

LATEST DOCUMENT DATA A

FIG. 7C

702 ~ CRITERION: WHETHER OR NOT TEXT PORTION EXCEPT HTML TAGS HAS BEEN ADDED, UPDATED, OR DELETED?

FIG. 7D

703 ~ 703 UPDATED CONTENT: FIRST TEAM : SECOND TEAM (BEFORE GAME) → FIRST TEAM : SECOND TEAM (FINAL) 10 : 2

FIG. 8A

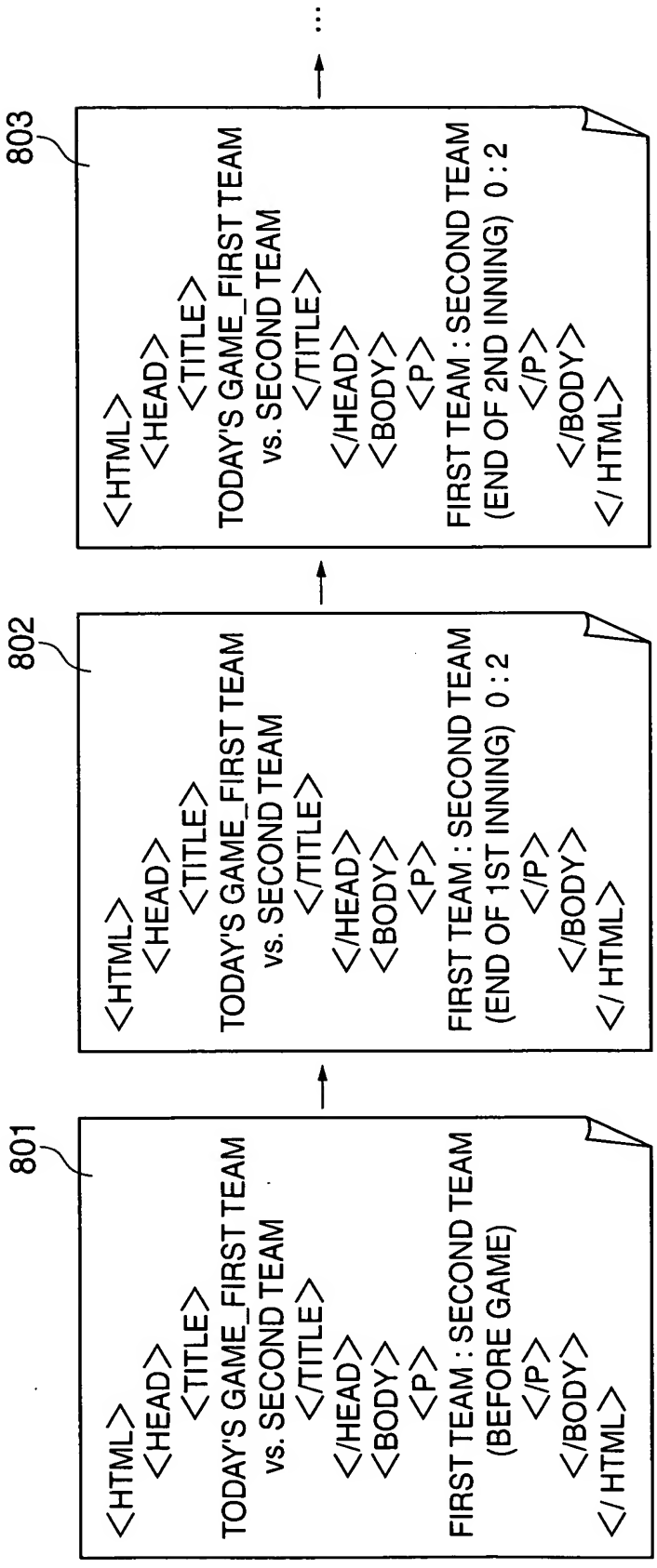

801
<HTML>
<HEAD>
<TITLE>
TODAY'S GAME_FIRST TEAM
vs. SECOND TEAM
</TITLE>
</HEAD>
<BODY>
<P>
FIRST TEAM : SECOND TEAM
(BEFORE GAME)
</P>
</BODY>
</ HTML>
802
<HTML>
<HEAD>
<TITLE>
TODAY'S GAME_FIRST TEAM
vs. SECOND TEAM
</TITLE>
</HEAD>
<BODY>
<P>
FIRST TEAM : SECOND TEAM
(END OF 1ST INNING) 0 : 2
</P>
</BODY>
</ HTML>
803
<HTML>
<HEAD>
<TITLE>
TODAY'S GAME_FIRST TEAM
vs. SECOND TEAM
</TITLE>
</HEAD>
<BODY>
<P>
FIRST TEAM : SECOND TEAM
(END OF 2ND INNING) 0 : 2
</P>
</BODY>
</ HTML>
...

FIG. 8B

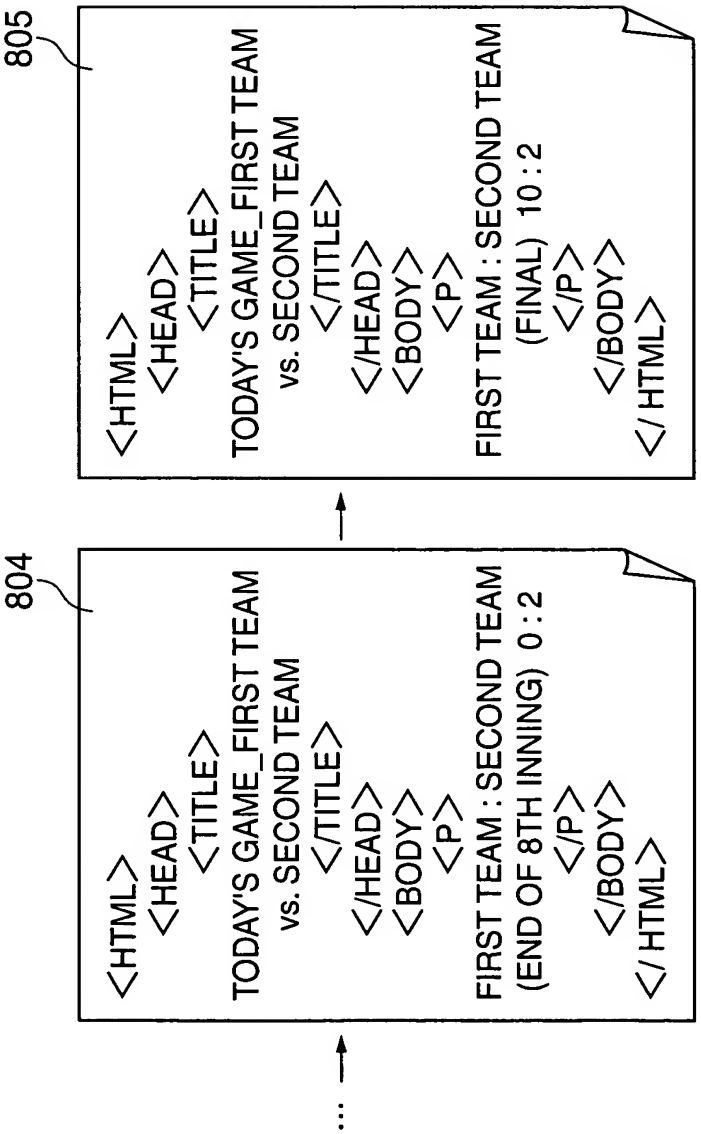

804
<HTML>
<HEAD>
<TITLE>
TODAY'S GAME_FIRST TEAM
vs. SECOND TEAM
</TITLE>
</HEAD>
<BODY>
<P>
FIRST TEAM : SECOND TEAM
(END OF 8TH INNING) 0 : 2
</P>
</BODY>
</ HTML>
...
805
<HTML>
<HEAD>
<TITLE>
TODAY'S GAME_FIRST TEAM
vs. SECOND TEAM
</TITLE>
</HEAD>
<BODY>
<P>
FIRST TEAM : SECOND TEAM
(FINAL) 10 : 2
</P>
</BODY>
</ HTML>

FIG. 9

FIRST TEAM : SECOND TEAM
→ FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (END OF 2ND INNING) 0 : 2
⋮
FIRST TEAM : SECOND TEAM (END OF 8TH INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (FINAL) 10 : 2

FIG. 10

FIRST TEAM : SECOND TEAM
→ FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (END OF 2ND INNING) 0 : 2
⋮
FIRST TEAM : SECOND TEAM (END OF 8TH INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (FINAL) 10 : 2

FIG. 11

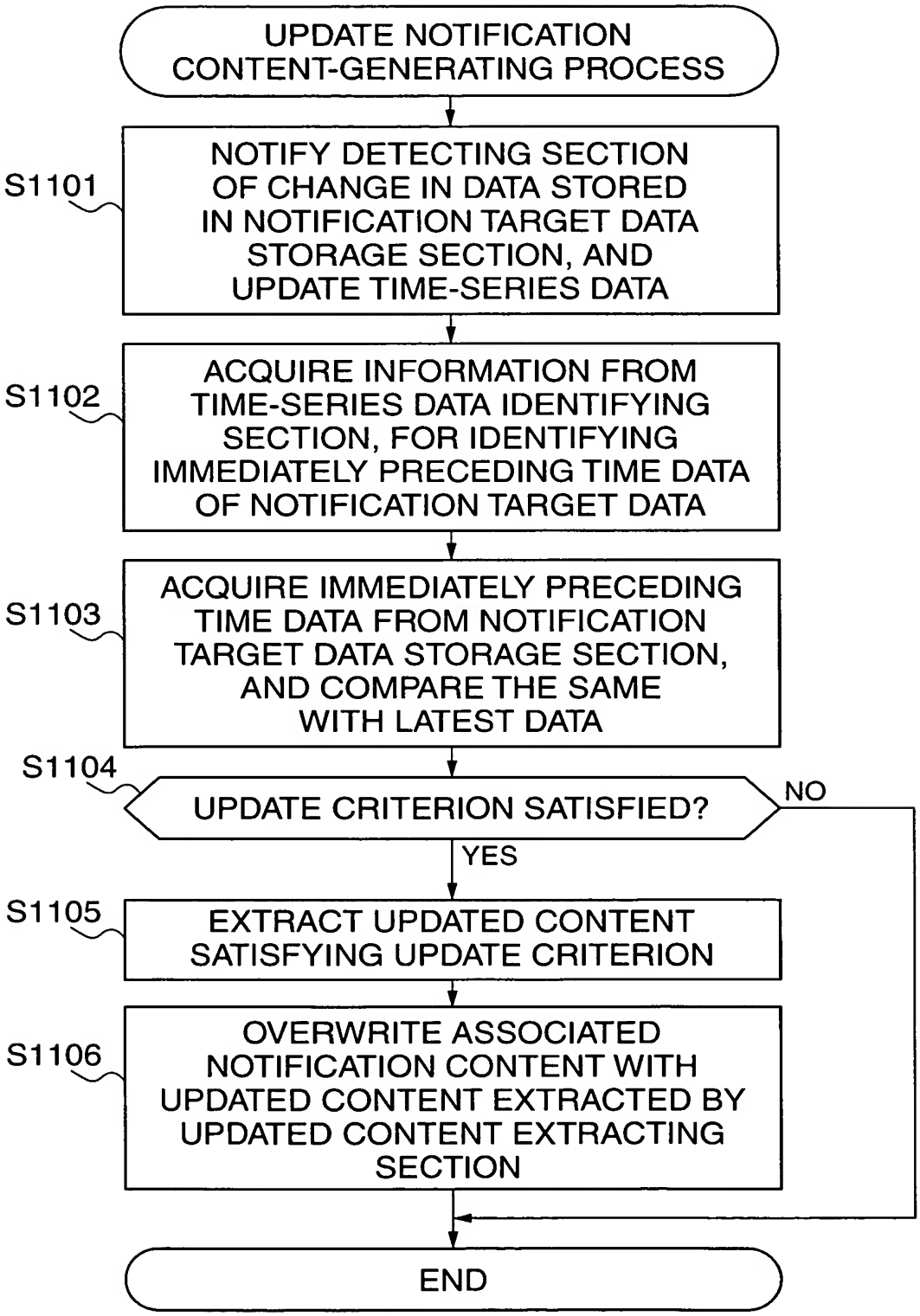

UPDATE NOTIFICATION CONTENT-GENERATING PROCESS
S1101
NOTIFY DETECTING SECTION OF CHANGE IN DATA STORED IN NOTIFICATION TARGET DATA STORAGE SECTION, AND UPDATE TIME-SERIES DATA
S1102
ACQUIRE INFORMATION FROM TIME-SERIES DATA IDENTIFYING SECTION, FOR IDENTIFYING IMMEDIATELY PRECEDING TIME DATA OF NOTIFICATION TARGET DATA
S1103
ACQUIRE IMMEDIATELY PRECEDING TIME DATA FROM NOTIFICATION TARGET DATA STORAGE SECTION, AND COMPARE THE SAME WITH LATEST DATA
S1104
UPDATE CRITERION SATISFIED?
NO
YES
S1105
EXTRACT UPDATED CONTENT SATISFYING UPDATE CRITERION
S1106
OVERWRITE ASSOCIATED NOTIFICATION CONTENT WITH UPDATED CONTENT EXTRACTED BY UPDATED CONTENT EXTRACTING SECTION
END

FIG. 12

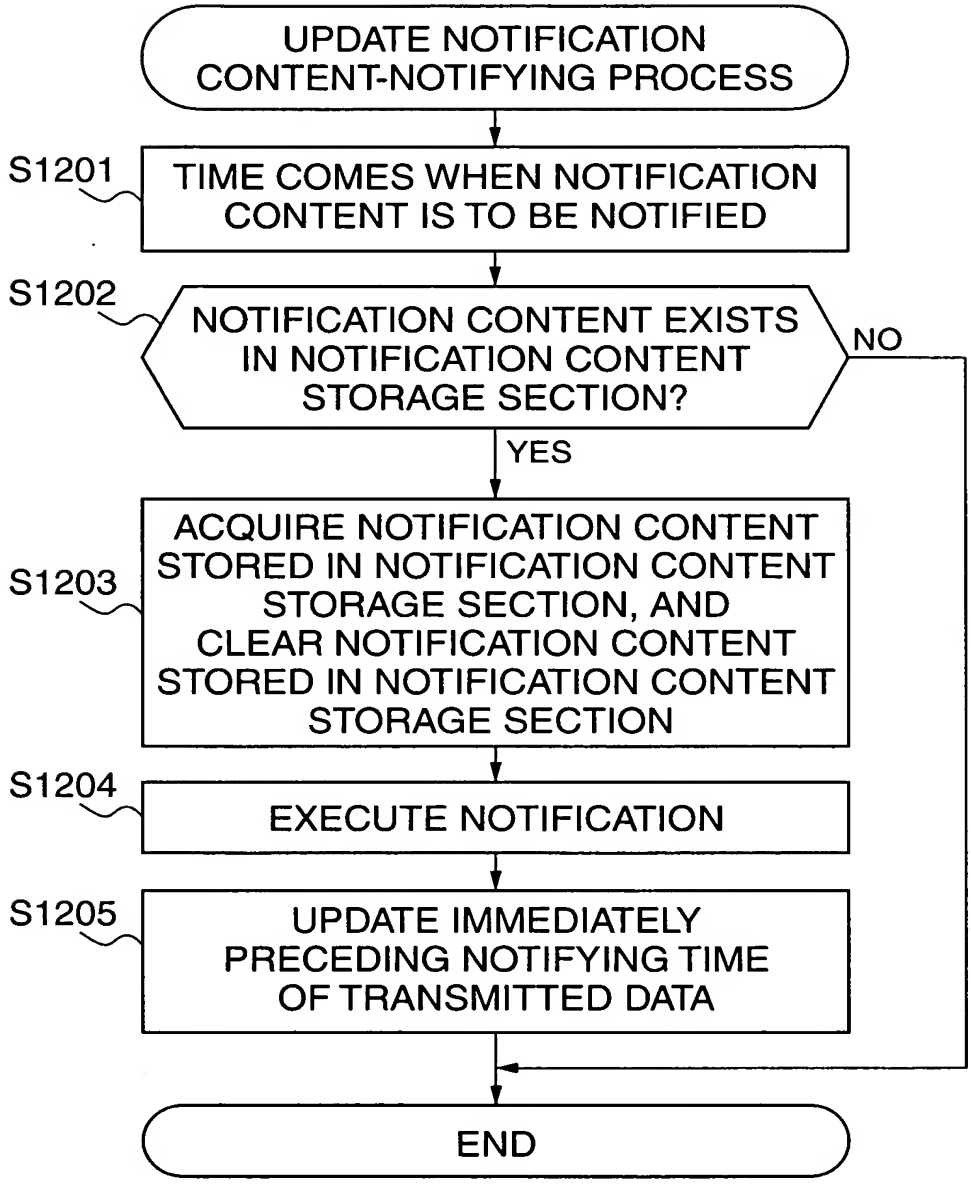

UPDATE NOTIFICATION CONTENT-NOTIFYING PROCESS
S1201
TIME COMES WHEN NOTIFICATION CONTENT IS TO BE NOTIFIED
S1202
NOTIFICATION CONTENT EXISTS IN NOTIFICATION CONTENT STORAGE SECTION?
NO
YES
S1203
ACQUIRE NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION, AND CLEAR NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION
S1204
EXECUTE NOTIFICATION
S1205
UPDATE IMMEDIATELY PRECEDING NOTIFYING TIME OF TRANSMITTED DATA
END

FIG. 13

1301

NOTIFICATION TARGET DATA	IMMEDIATELY PRECEDING DETECTION TIME
DocDB/Data1/DOCUMENT DATA FILE A	2001 12 07 19:00
DocDB/Data1/DOCUMENT DATA FILE B	2001 12 07 20:00
⋮	⋮

FIG. 14

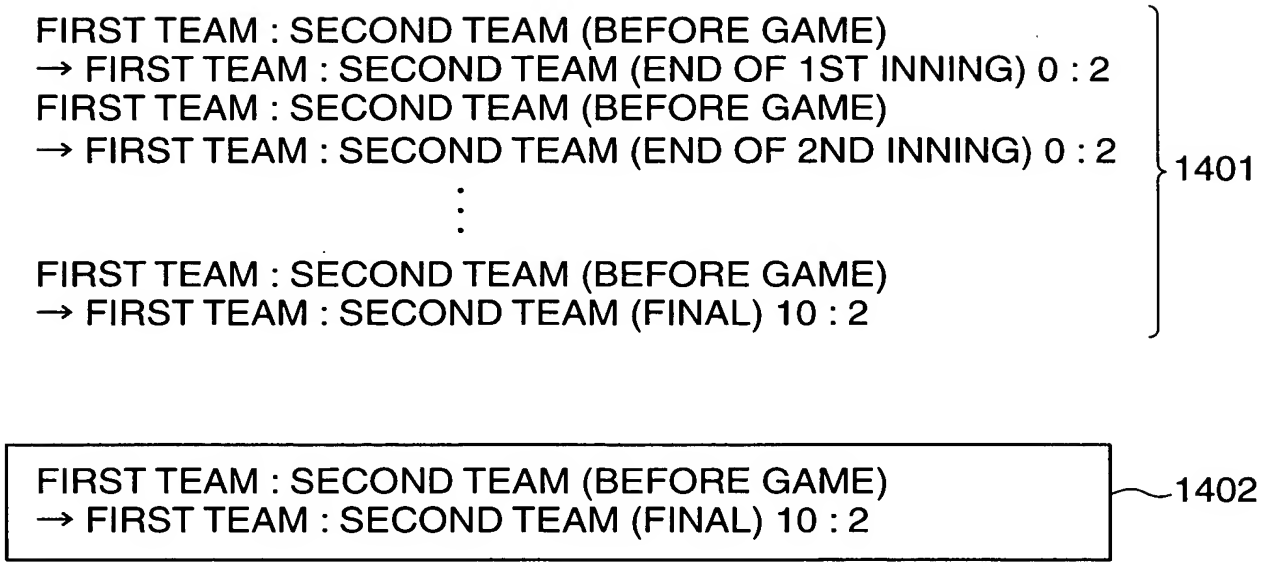

FIRST TEAM : SECOND TEAM (BEFORE GAME)
→ FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
FIRST TEAM : SECOND TEAM (BEFORE GAME)
→ FIRST TEAM : SECOND TEAM (END OF 2ND INNING) 0 : 2
FIRST TEAM : SECOND TEAM (BEFORE GAME)
→ FIRST TEAM : SECOND TEAM (FINAL) 10 : 2
1401
FIRST TEAM : SECOND TEAM (BEFORE GAME)
→ FIRST TEAM : SECOND TEAM (FINAL) 10 : 2
1402

FIG. 15

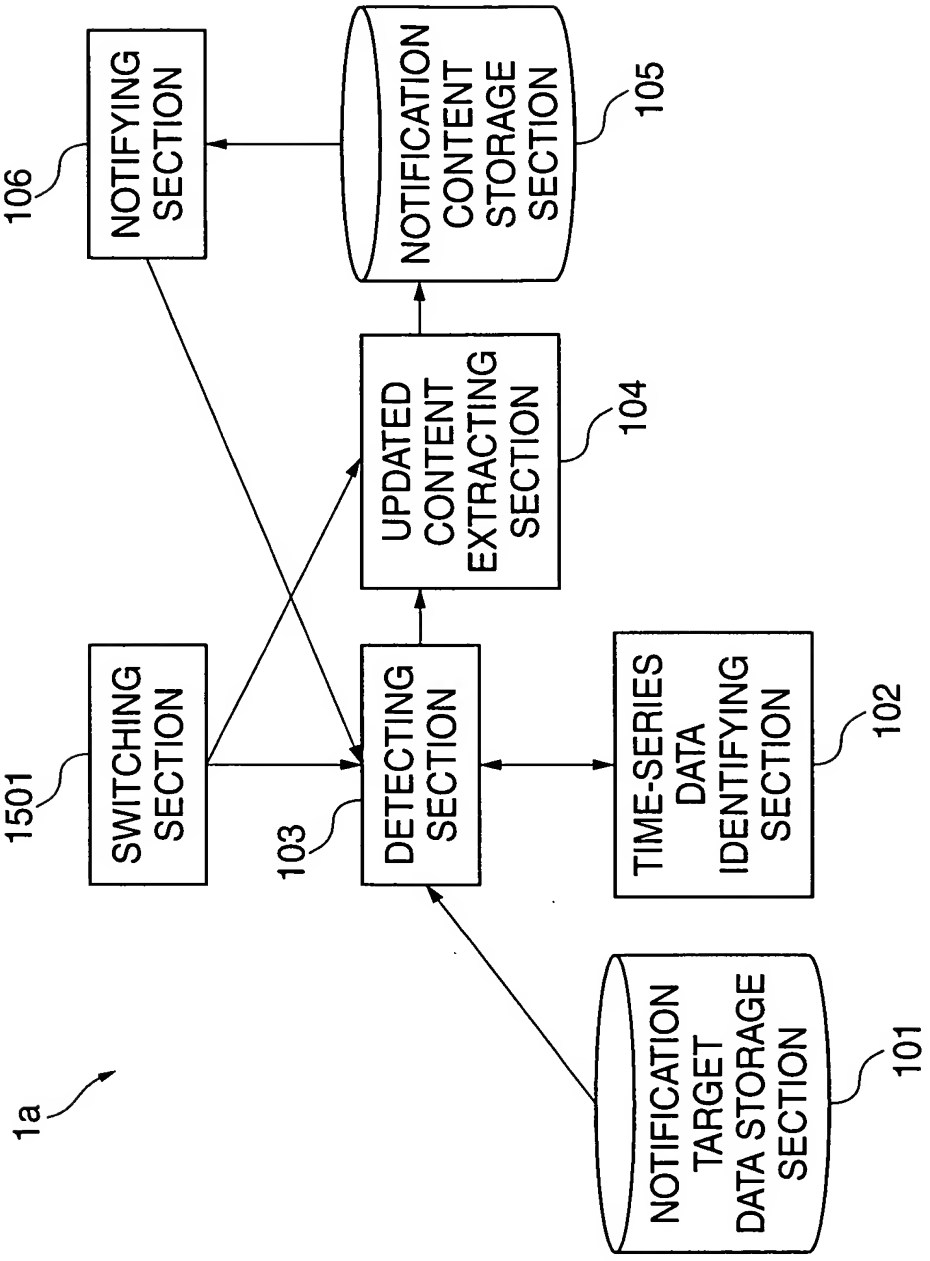

NOTIFYING SECTION
106
NOTIFICATION CONTENT STORAGE SECTION
105
UPDATED CONTENT EXTRACTING SECTION
104
SWITCHING SECTION
1501
DETECTING SECTION
103
TIME-SERIES DATA IDENTIFYING SECTION
102
NOTIFICATION TARGET DATA STORAGE SECTION
101
1a

FIG. 16Aa

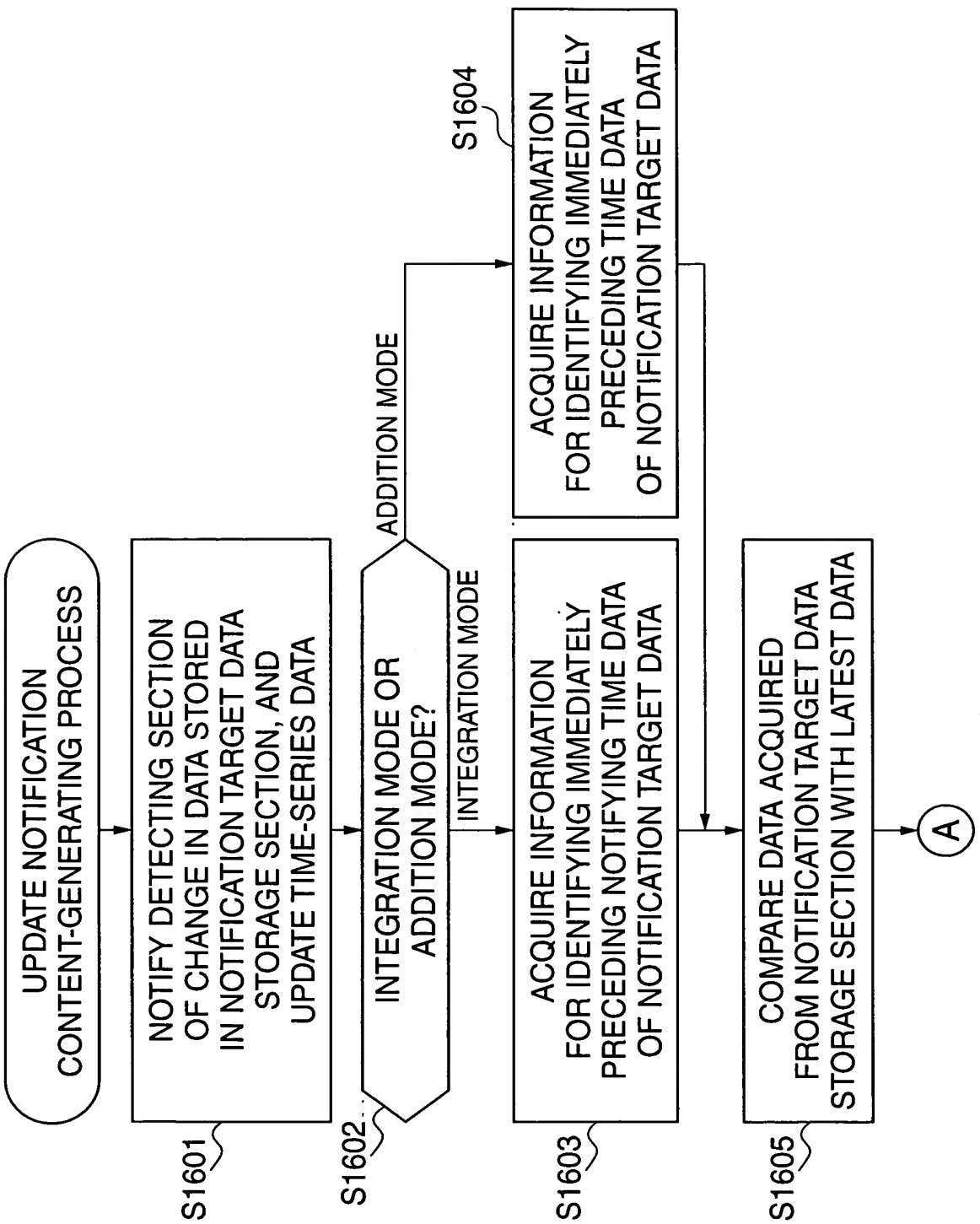

UPDATE NOTIFICATION CONTENT-GENERATING PROCESS
NOTIFY DETECTING SECTION OF CHANGE IN DATA STORED IN NOTIFICATION TARGET DATA STORAGE SECTION, AND UPDATE TIME-SERIES DATA
INTEGRATION MODE OR ADDITION MODE?
ADDITION MODE
INTEGRATION MODE
ACQUIRE INFORMATION FOR IDENTIFYING IMMEDIATELY PRECEDING TIME DATA OF NOTIFICATION TARGET DATA
ACQUIRE INFORMATION FOR IDENTIFYING IMMEDIATELY PRECEDING NOTIFYING TIME DATA OF NOTIFICATION TARGET DATA
COMPARE DATA ACQUIRED FROM NOTIFICATION TARGET DATA STORAGE SECTION WITH LATEST DATA
A
S1601
S1602
S1603
S1604
S1605

FIG. 16Ab

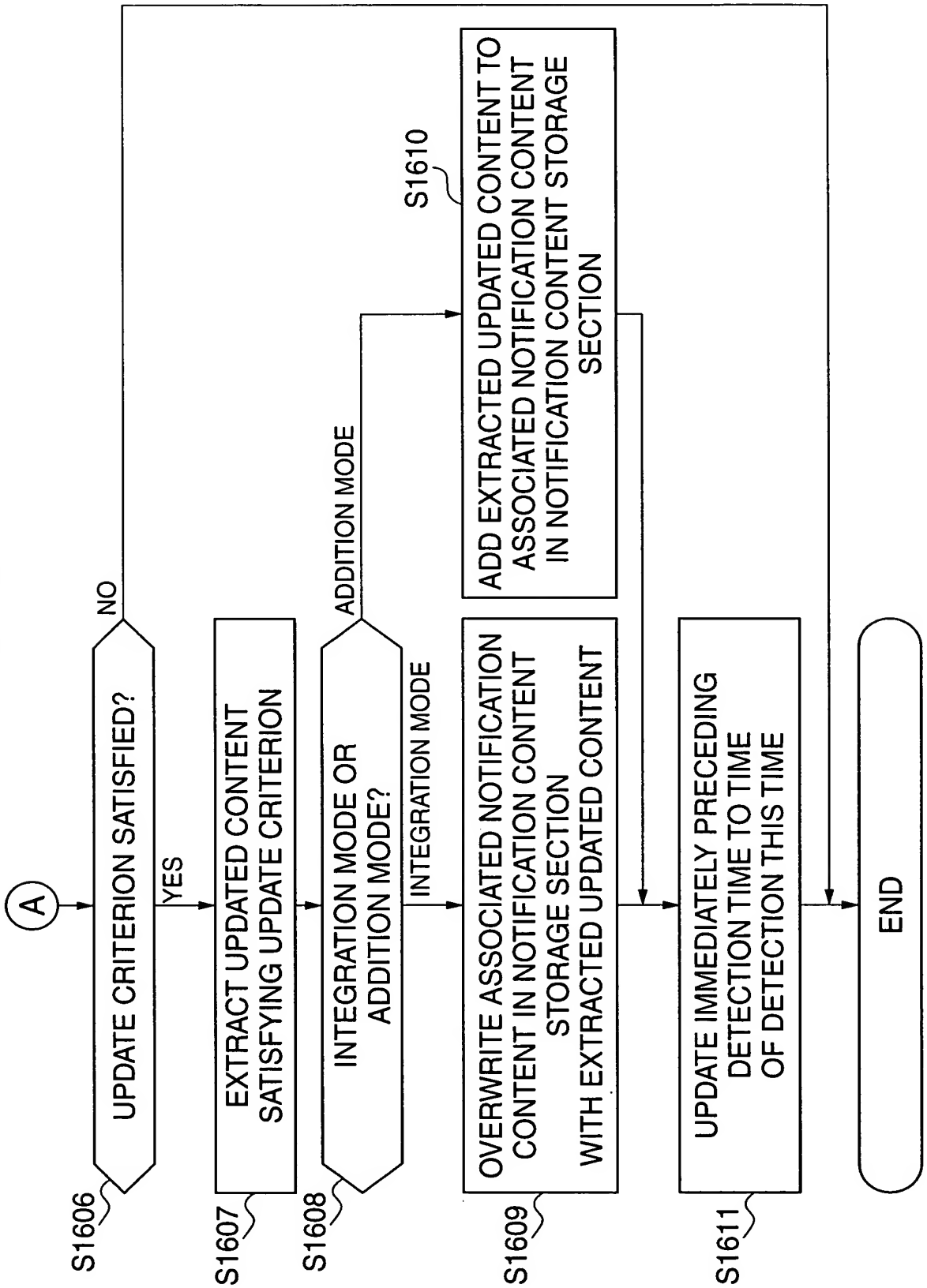

A
UPDATE CRITERION SATISFIED?
S1606
NO
YES
EXTRACT UPDATED CONTENT SATISFYING UPDATE CRITERION
S1607
INTEGRATION MODE OR ADDITION MODE?
S1608
ADDITION MODE
INTEGRATION MODE
S1610
ADD EXTRACTED UPDATED CONTENT TO ASSOCIATED NOTIFICATION CONTENT IN NOTIFICATION CONTENT STORAGE SECTION
OVERWRITE ASSOCIATED NOTIFICATION CONTENT IN NOTIFICATION CONTENT STORAGE SECTION WITH EXTRACTED UPDATED CONTENT
S1609
UPDATE IMMEDIATELY PRECEDING DETECTION TIME TO TIME OF DETECTION THIS TIME
S1611
END

FIG. 16B

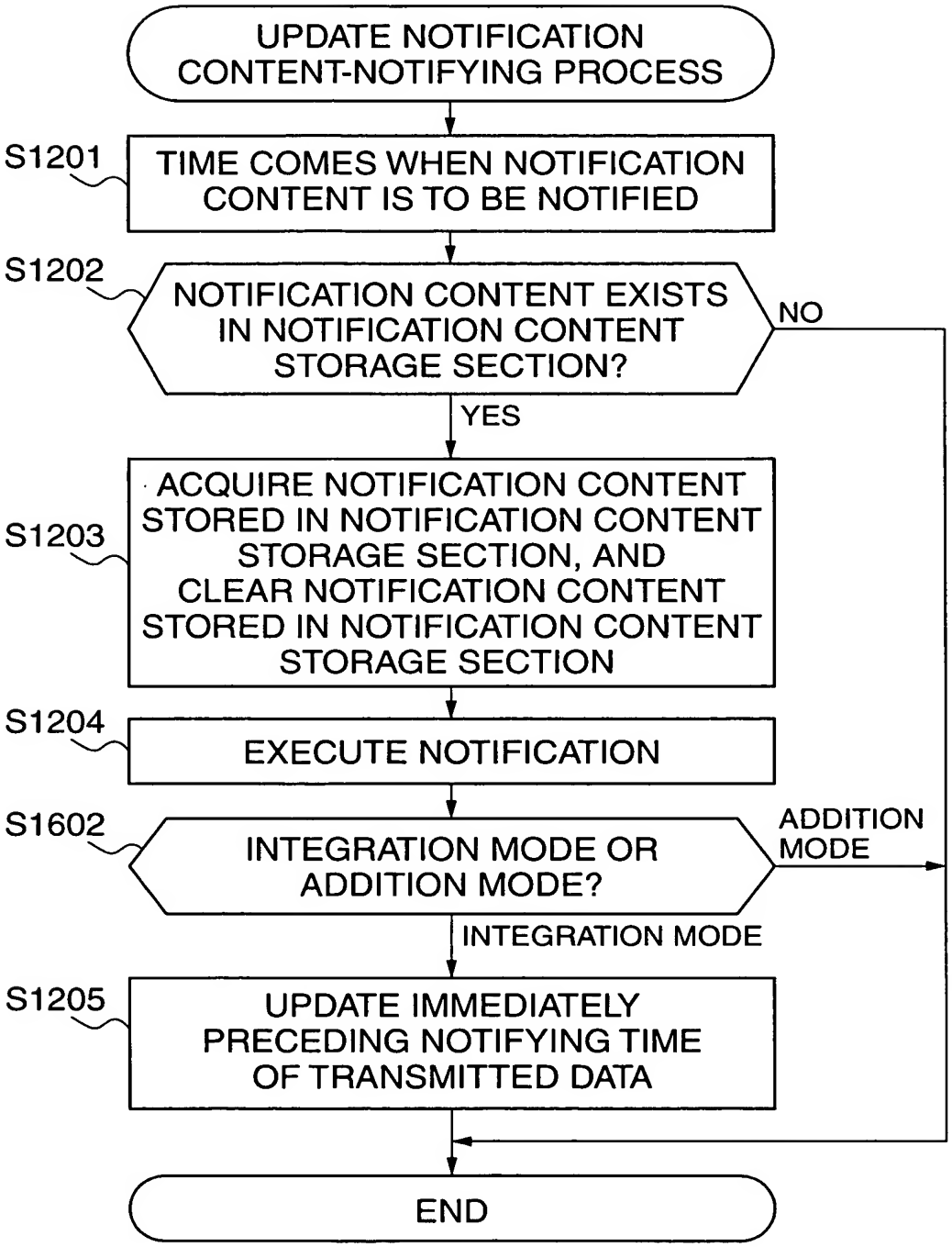

UPDATE NOTIFICATION CONTENT-NOTIFYING PROCESS
S1201
TIME COMES WHEN NOTIFICATION CONTENT IS TO BE NOTIFIED
S1202
NOTIFICATION CONTENT EXISTS IN NOTIFICATION CONTENT STORAGE SECTION?
NO
YES
S1203
ACQUIRE NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION, AND CLEAR NOTIFICATION CONTENT STORED IN NOTIFICATION CONTENT STORAGE SECTION
S1204
EXECUTE NOTIFICATION
S1602
INTEGRATION MODE OR ADDITION MODE?
ADDITION MODE
INTEGRATION MODE
S1205
UPDATE IMMEDIATELY PRECEDING NOTIFYING TIME OF TRANSMITTED DATA
END

FIG. 17

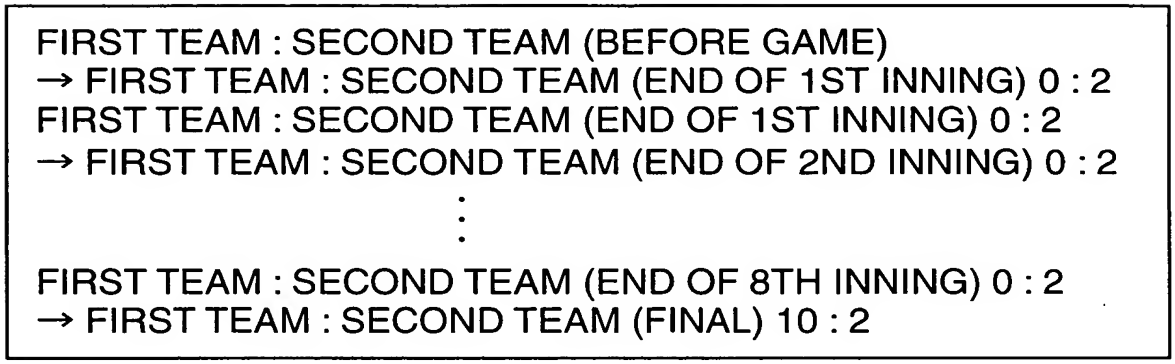

FIRST TEAM : SECOND TEAM (BEFORE GAME)
→ FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
FIRST TEAM : SECOND TEAM (END OF 1ST INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (END OF 2ND INNING) 0 : 2
FIRST TEAM : SECOND TEAM (END OF 8TH INNING) 0 : 2
→ FIRST TEAM : SECOND TEAM (FINAL) 10 : 2

FIG. 18

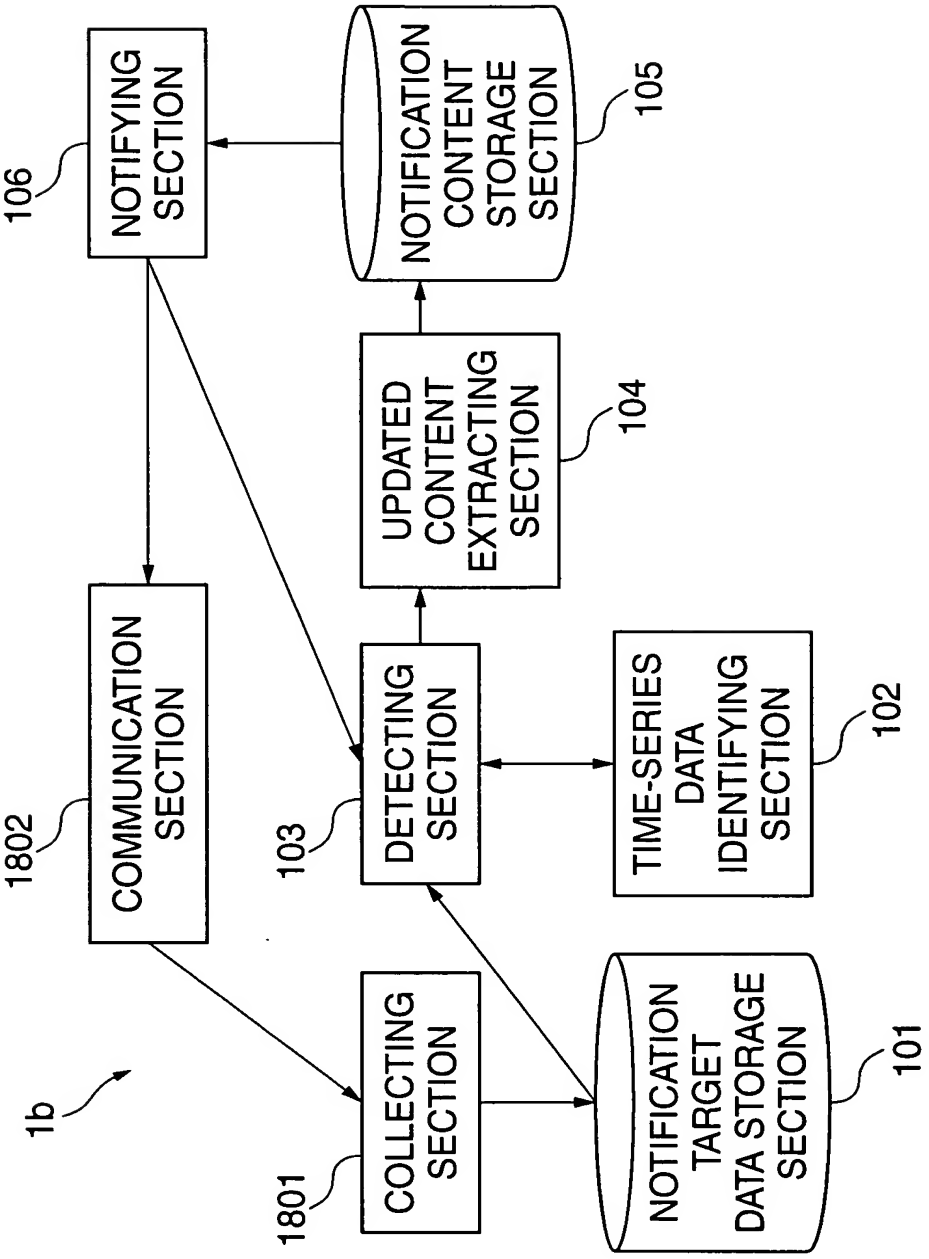

1b
NOTIFYING SECTION
106
NOTIFICATION CONTENT STORAGE SECTION
105
UPDATED CONTENT EXTRACTING SECTION
104
COMMUNICATION SECTION
1802
DETECTING SECTION
103
TIME-SERIES DATA IDENTIFYING SECTION
102
COLLECTING SECTION
1801
NOTIFICATION TARGET DATA STORAGE SECTION
101

FIG. 19

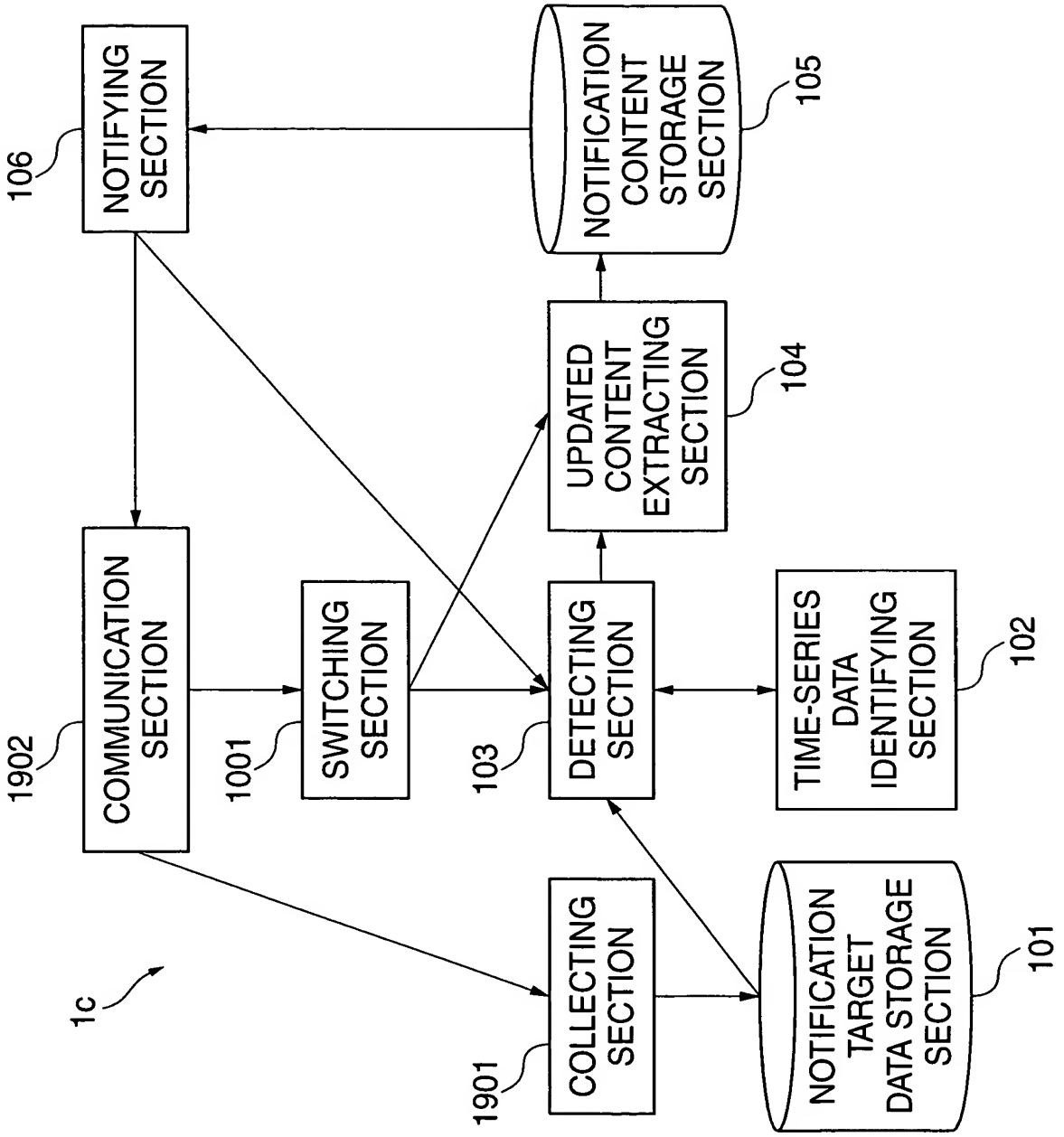
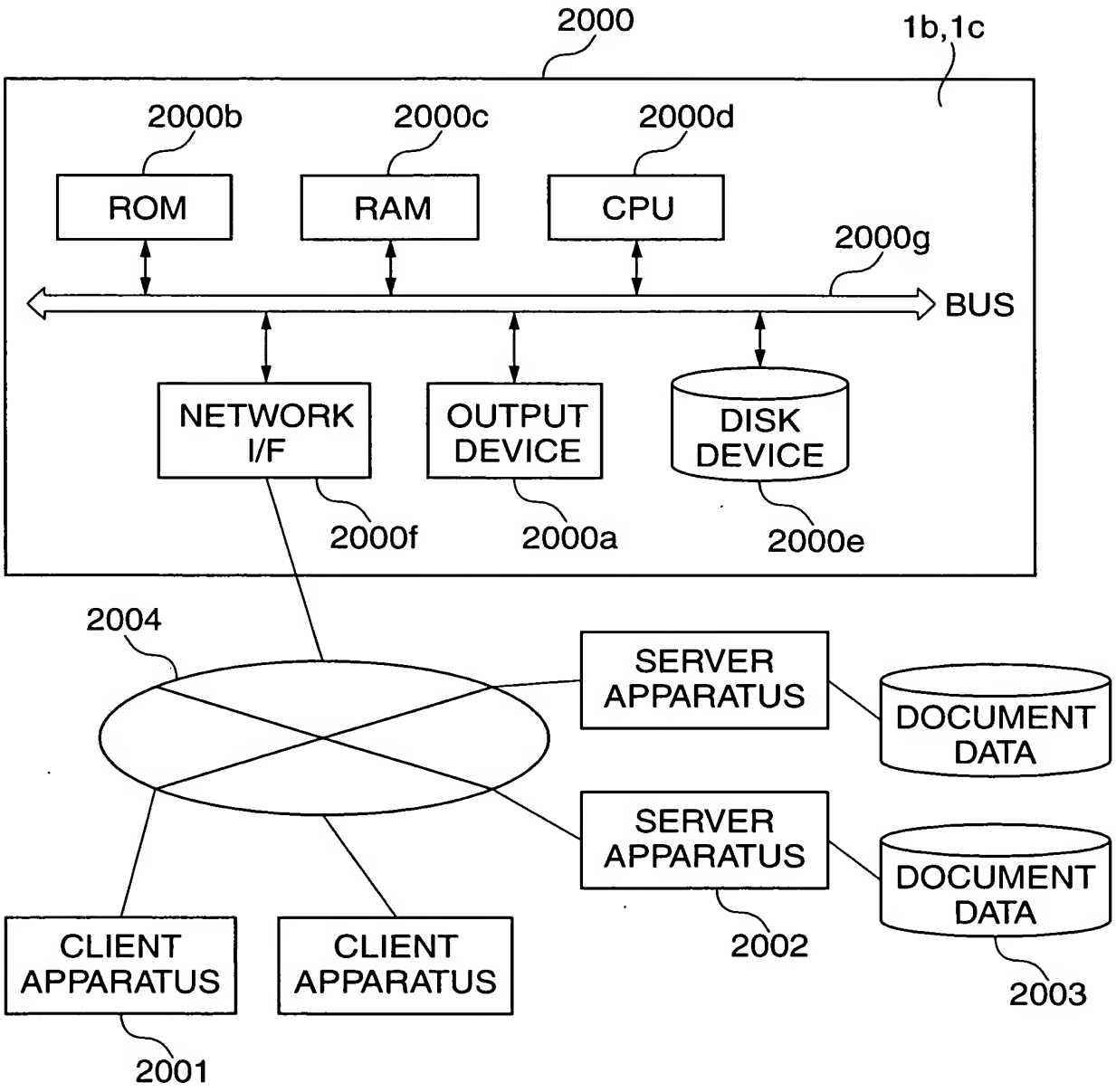

NOTIFYING SECTION
106
NOTIFICATION CONTENT STORAGE SECTION
105
UPDATED CONTENT EXTRACTING SECTION
104
COMMUNICATION SECTION
1902
SWITCHING SECTION
1001
DETECTING SECTION
103
TIME-SERIES DATA IDENTIFYING SECTION
102
COLLECTING SECTION
1901
NOTIFICATION TARGET DATA STORAGE SECTION
101
1c

FIG. 20


2000
1b,1c
2000b
2000c
2000d
ROM
RAM
CPU
2000g
BUS
NETWORK I/F
OUTPUT DEVICE
DISK DEVICE
2000f
2000a
2000e
2004
SERVER APPARATUS
DOCUMENT DATA
SERVER APPARATUS
DOCUMENT DATA
CLIENT APPARATUS
CLIENT APPARATUS
2002
2003
2001